

## NOTES, INFORMATION & NEWS

### Field Observations on Feeding and Antagonistic Behavior by *Pteraeolidia ianthina* (Nudibranchia: Aeolidioidea)

by

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#### Feeding

On 19 March 1982, I observed an 85-mm specimen of *Pteraeolidia ianthina* eating hydranths of the athecate hydroid *Halocordyle distica* (Goldfuss) at a depth of 9 m on the northwestern side of Pelorous Island, northern Queensland, Australia. This fortuitous observation formed the basis for a previous statement that this aeolid fed on hydroids (WILLAN & COLEMAN, 1984).

On 1 December 1985, Messrs. R. McGill and D. Firman observed a specimen about 50 mm long consume a hydranth of *Ralpharia magnifica* Watson at a depth of 6 m on the northern side of Muttonbird Island, Coffs Harbour, northern New South Wales, Australia. According to their recollections, these divers watched one *Pteraeolidia ianthina* from a group of four crawl towards a solitary *R. magnifica*. This approach lasted some 15 min, during which time the animal crawled approximately 15 cm. Upon reaching the base of the hydroid, the *P. ianthina* proceeded to climb its hydrocaulus (a height of 2.5 to 3 cm; *R. magnifica* is an exceptionally large tubulariid hydroid), a behavior lasting a further 10 min. At the top, the nudibranch briefly arched the anterior 2 to 3 cm of its body away from the hydranth. Then it made a sudden lunge forwards and, after initially grasping some aboral tentacles, rapidly devoured the whole hydranth. The hydranth was consumed in less than 1 min. The *P. ianthina* did not eat the hydrocaulus, but returned to the substratum once it had fed. A further dive on the same site two weeks later revealed all the *Ralpharia* hydranths surrounding the one eaten by the *P. ianthina* had also been consumed.

On 30 August 1986, these same divers observed another feeding attack by *Pteraeolidia ianthina* at a depth of 10 m on the southern side of Split Solitary Island near Coffs Harbour. This time, however, they had deliberately placed a 60-mm *P. ianthina* near the base of a *Ralpharia magnifica* individual. The *P. ianthina* fed as before, but this time it bent the hydrocaulus into a right angle as it fed from the substratum. During this episode, which lasted approximately 2 min, Mr. McGill took two photographs, one of which is reproduced here (Figure 1). It shows the *P. ianthina* actually devouring the hydranth. Note the nudi-

branch's outstretched oral tentacles as well as its backwardly contracted rhinophores.

#### Antagonistic Behavior

On 28 January 1988, Dr. T. M. Gosliner and I witnessed an aggressive encounter between two adult (approximately 60 mm long) *Pteraeolidia ianthina* at 5 m on the summit of "Planet Rock," an isolated sheer-walled pinnacle in Astrolabe Bay on the northern coast of Papua New Guinea. We watched for 10 min as two animals engaged each other in what appeared to me to be a fighting bout. Each animal flailed the anterior third of its body against the opponent, biting whenever its oral tentacles touched the other individual's body during a lunge. Both animals were writhing the front half of their body and repeatedly bristling and lowering all their cerata. The biting failed to wound the opponent as far as we could see, and no appendages were lost. Neither specimen was crawling during the encounter and no active pursuit took place.

These observations have been reported because they open new doors into the behavior and natural history of *Pteraeolidia ianthina*. For instance it has recently been hypothesized that because this aeolid has a symbiosis with zooxanthellae it "never or seldom needs to feed" (RUDMAN, 1986, 1987). I would suggest that feeding is not rare at all in *P. ianthina*; it is just rarely observed.

I am most grateful to Messrs. Robert McGill and Derek Firman for sharing with me their observations of adult *Pteraeolidia ianthina* feeding on hydroids and to Mr. McGill for allowing me to reproduce his photograph. Mrs. Jan Watson identified the hydroid from this photograph. Dr.



Figure 1

*Pteraeolidia ianthina* consuming the athecate hydroid *Ralpharia magnifica*. 1 December 1985. Photograph: R. McGill.

Terrence Gosliner first noticed the aggressive individuals of *P. ianthina* and attracted my attention to watch them (he subsequently observed another similar encounter). I wish to thank him, Mr. David Brunckhorst, Mr. McGill, and an anonymous referee for comments on an earlier version of this manuscript.

#### Literature Cited

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#### The Occurrence of Living Mollusks on

#### *Diopatra* Tube-Caps

by

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#### Introduction

Tube-caps of the onuphid polychaete *Diopatra* were shown by BELL & COEN (1982) to serve as a substrate for a variety of meiofauna, and other researchers have discussed larger organisms found in association with tube-caps (e.g., MANGUM *et al.*, 1968; WOODIN, 1978; GALLAGHER *et al.*, 1983; BAN & NELSON, 1987; LUCKENBACH, 1987). In the present note we report specifically on the ubiquitous presence of epibiont mollusks on tube-caps at three widely separated collecting sites.

#### Materials and Methods

Thirty-six tube-caps (12 from each site) were collected by hand at low tide from three moderately protected sand flats: *Diopatra ornata* (Moore, 1911) from Venado Beach, Pacific coast of Panama (February 1986); and *Diopatra cuprea* (Bosc, 1802) from Tom's Cove, Assateague National Seashore, Virginia, U.S.A. (June 1987) and from Wheeler's Beach, Woods Hole, Massachusetts, U.S.A. (July 1987). The Panama and Assateague specimens were

Table 1

Molluscan species found on 12 *Diopatra* tube-caps at each of three sites (numbers of individuals in parentheses).

#### Panama

- Anachis* sp. (4)  
*Crepidula* sp. cf. *excavata* (Broderip, 1834) (23)  
*Crucibulum* sp. (2)  
*Nassarius* (*Arcularia*) *complanatus* (Powys, 1835) (1)  
*Notoacmaea* sp. cf. *subrotundata* (Carpenter, 1865) (1)  
*Terebra* sp. (2)  
*Theodoxus* (*Vittocliton*) *luteofasciatus* Miller, 1879 (7)  
*Chione* sp. (3)  
*Modiolus* sp. (1)  
*Nuculana* sp. (1)  
*Sphenia fragilis* (H. & A. Adams, 1854) (3)  
 Unidentified chiton species (3)

#### Assateague

- Crepidula convexa* Say, 1822 (1)  
*Crepidula fornicata* L., 1758 (1)  
*Mercenaria mercenaria* (L., 1758) (11)  
 Unidentified bivalve species (1)

#### Woods Hole

- Crepidula convexa* (2)  
*Crepidula fornicata* (2)  
*Littorina littorea* (L., 1758) (3)  
*Nassarius trivittatus* (Say, 1822) (3)  
*Seila adamsi* (Lea, 1845) (1)  
*Anadara transversa* (Say, 1822) (2)  
*Mya arenaria* L., 1758 (2)

air-dried and individually packaged until examined; the Woods Hole specimens were examined within a day of collection. Each tube-cap was examined under a dissecting microscope for epibiont mollusks. Shells of dead mollusks that had been attached by the worm to its tube-cap were identified but were not included in the data. Mollusks that had been alive at the time of collection were recognized in the following ways: gastropods were relatively unworn and had shining apertures and undamaged margins, or (as in the case of *Crepidula* species) were still attached to shell fragments or to the tube itself; bivalves had both valves still connected and closed; and the chitons were still attached to fragments embedded in the tube. Once the epibiont mollusks had been isolated they were identified to the lowest possible taxon. (Panama mollusks were identified by the senior author, using KEEN, 1971; the Assateague and Woods Hole species were familiar to all the authors.)

#### Results and Discussion

Twenty-one species and 80 individuals, none greater than 10 mm in length, were found on the examined *Diopatra* tube-caps (Table 1). The Panamanian tube-caps each had two or more epibiont mollusks (up to nine on one individual), whereas those from Assateague and Woods Hole often had none or only one (Table 2). Gastropods, bivalves,